UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE 10-29-85

SUBJECT Transmittal of Laboratory Data

FROM Charles P. Hensley CPH
Chief, Laboratory Branch, ENSV

TO Keffer

Analyses have been completed for the following activities and the data results are attached.

Activity No.	Description
AKJC4	Spring River Basin (complete transmittal)

Attachments

cc: Data Files

107-256- 7061064

DATA QUALIFIERS FOR EPA REGION VII

U not detected. For EPA VII lab data U is applied only in conjunction with detection limits. For contract lab data it is applied to contract required limits.

M The value indicated is below the quantitation limit but above the detection limit.

J The associated value is an estimated quantity because quality control criteria were not met.

I Analysis attempted but no result can be reported.

FIELD SHEET
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: SPRING RIVER BASIN - SYNTEX Site Number:
Location: MISSOURI Site Code:

Collected: YR: 85 MO: 08 Day: 27 Time: 0900 Leader: KOTH

Sample Number: AKJC4021 SMD #:

Sample Media (circle one):
SOIL, DUST, RINSATE, (SEDIMENT) WATER, OTHER:_____

Sample Split (circle one): (YES) NO

Sample Container	Tag Color	Preservative	Analysis Requested
1 - 16oz JAR *	BLUE		2 3 7 8 TCDD

Depth: 0-6" Pan #:_____ Aliquots: 10

Samplers: Koth
Wiggans

COMMENTS OF FIELD PERSONNEL

Site Description:

Location # #5, 1.2 miles downstream from the Syntex Agribusiness Plant

* 2-16oz jars were given for split

IBM-PC

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: SPRING RIVER BASIN - SYNTEX Site Number:
Location: MISSOURI Site Code:

Collected: YR: 85 MO: 08 Day: 27 Time: 1030 Leader: KOTH

Sample Number: AKJC4022 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, (SEDIMENT), WATER, OTHER:_____

Sample Split (circle one): (YES) NO

Sample Container	Tag Color	Preservative	Analysis Requested
1 - 16oz JAR *	BLUE		2 3 7 8 TCDD

Depth: 0-6" Pan #:_____ Aliquots: 10

Samplers: Koth
Wiggans

COMMENTS OF FIELD PERSONNEL

Site Description:

Location # 3, 6 miles downstream from the Syntex Agribusiness Plant

* 2 - 16 oz jars were given for split

IBM-PC

FIELD SHEET

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION VII
ENVIRONMENTAL SERVICES DIV. 25 FUNSTON RD. KANSAS CITY, KS 66115

Site Name: SPRING RIVER BASIN - SYNTEX Site Number:
Location: MISSOURI Site Code:

Collected: YR: 85 MO: 08 Day: 27 Time: 1145 Leader: KOTH

Sample Number: AKJC4023 SMO #:

Sample Media (circle one):
SOIL, DUST, RINSATE, (SEDIMENT), WATER, OTHER:_____

Sample Split (circle one): (YES) NO

Sample Container	Tag Color	Preservative	Analysis Requested
1 - 16oz JAR *	BLUE		2 3 7 8 TCDD

Depth: 0-6" Pan #:_____ Aliquots: 10

Samplers: Koth
Wiggans

COMMENTS OF FIELD PERSONNEL

Site Description:

Location # 1, .03 miles downstream from the Syntex Agribusiness Plant

* 2-16 oz jars were given for split

IBM-PC

DATE :10/28/85
DATABASE: SYNAKJC4
REPORT FOR SITE: SYNTEX PROPERTY

SITE	EPA NO	VALUE	C	R	V	SAMPLED	DESCRIPTION
SYN	AKJC4021	.140	U		V	08/27/85	SEDIMENT SMPL, LOC 5, 12 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4021L	.100	U		V	08/27/85	SEDIMENT SMPL, LOC 5, 12 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4022	.110	U		V	08/27/85	SEDIMENT SMPL, LOC 3, 6 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4023	.100	U		V	08/27/85	SEDIMENT SMPL, LOC 1, .03 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4023L	.100	U		V	08/27/85	SEDIMENT SMPL, LOC 1, .03 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH

VALIDATED DIOXIN DATA FOR SYNTEX PROPERTY

DATE 10/28/85

SITE	EPA NO		AMOUNT		SAMPLED	DESCRIPTION
SYN	AKJC4021	LESS THAN	1.000	PPB	08/27/85	SEDIMENT SMPL, LOC 5, 12 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4021L	LESS THAN	1.000	PPB	08/27/85	SEDIMENT SMPL, LOC 5, 12 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4022	LESS THAN	1.000	PPB	08/27/85	SEDIMENT SMPL, LOC 3, 6 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4023	LESS THAN	1.000	PPB	08/27/85	SEDIMENT SMPL, LOC 1, .03 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH
SYN	AKJC4023L	LESS THAN	1.000	PPB	08/27/85	SEDIMENT SMPL, LOC 1, .03 M DWSTR SYNTEX, 10 ALIQUOTS 0-6" DEPTH

SYNTEX RESEARCH
ANALYTICAL RESEARCH
PALO ALTO, CA 94304

MEMORANDUM

A/R: 6481

MEMO TO: L. Throop

October 1, 1985

CC:

FROM: D. Robertson DR

SUBJECT: Labeling of Fish Samples From the Spring River

There was some concern about the method of preparation for samples of whole fish taken from the Spring River in 1984. I spoke with Dr. Michael Gross, who directed the analysis, and Mr. Ronald Crunkilton, who obtained the fish and prepared them for analysis. I believe that there are some deficiencies in their labeling and preparation of the fish samples. Some data needed to calculate the TCDD levels in whole fish is not available.

Mr. Crunkilton collected the fish and filleted some as the protocol required. It was his original expectation that the samples would be homogenized by the analytical laboratory. Later it was decided that the blending of the samples would be arranged for by MDNR. At location 1, a special group consisting of whole fish, was properly prepared and labeled Group C. One group of fish at each location was labeled "A" and the fillets were prepared for analysis as required by the protocols. At each location a group of fish, labeled "B", was prepared by removing one fillet. The fillets were combined and homogenized and the remaining parts were combined and homogenized. Some confusion then arose because the remaining parts were labeled as "whole fish" even though they were only the portions of the fish with one fillet removed. When I spoke to Mr. Crunkilton he was refering to his original records and he confirmed that the "whole fish" in Group B at each location were not actually whole fish but, in fact, the remaining parts after one fillet had been removed. The confusion over labeling can be overcome, but he could not provide the original weights of the two portions. So,

we cannot calcul[redacted]e a weighted average for th[redacted]whole fish analysis. We may be able to use the typical yield for fillets in these species or actual weights from the samples taken this year to estimate the values for the 1984 samples. Obviously, there are limitations in this approach.

At the Midwest Center for Mass Spectrometry, the abbreviations for "Group" were misread and typed as "9p" in the final report. One sample number appears to be confused. The whole fish [sic] sample in Group B from location 3 is labeled as BAC 414, but reported as BAC # 405. However, the descriptive part of the label appears to be correct and the TCDD level reported appears to be typical of the remainder of the fish, rather than the fillet. These problems seem to be minor and to a large extent can be rectified.

I am confident that the confusion has not affected the analyses reported for fillets of fish from the Spring River. However, with the exception of Group C from Location 1, the analysis reported for whole fish in fact represent remnants from partially filleted fish. Since the level of TCDD is higher in the remnant than in either the fillet or whole fish, these values are not accurate measures of fish contamination. Consequently, these values for remnants cannot be used to evaluate trends with time or distance, or to attempt to assess risks of exposure to TCDD.

The tables from Dr. Gross' report of January 8, 1985 have been revised to reflect the information discussed here. For Table 1 the only changes needed were to spell out the word "Group". In Table 2 all of the entries for Group B were deleted since these values were derived from samples of remnants rather than whole fish. The single entry for whole fish from Location 1 is the only one remaining for use in statistical evaluations.

dr/lfssr(L).028

Table 1. Analysis of Fish Fillet for 2,3,7,8-TCDD by Capillary Column GC/HRMS

Sample ID	Weight	Concentration of 2,3,7,8-TCDD (ppt)	Detection Limit (ppt)	Percent Recovery	320/322 Isotope Ratio
Location 1					
Group A, BAC #409	31.89	4	2	80	.69
Group B, BAC #402	33.94	4	2	100	.76
Location 2					
Group A, BAC #403	31.50	3	0.9	90	.80
Group B, BAC #403	34.86	4	0.8	75	.71
Location 3					
Group A, BAC #405	33.61	3	1.5	75	.671
Group B, BAC #405	36.33	3	0.9	70	.71
Location 4					
Group A, BAC #406	30.57	2	1.0	100+	.79
Group B, BAC #406	50.41	2	0.6	85	.671
Location 5					
Group A, BAC #408	35.17	ND	2.0	100+	
Group B, BAC #408	37.25	ND	1.5	70	

1 See explanation on pages 9 and 10 under comments.

(Table revised by David Robertson, 8/20/85)

Table 2. Analysis of Whole Fish for 2,3,7,8-TCDD by Capillary Column GC/HRMS

Sample ID	Weight	Concentration of 2,3,7,8-TCDD (ppt)	Detection Limit (ppt)	Percent Recovery	320/322 Isotope Ratio
Location 1					
Group C, BAC #402	31.47	30	2	60	.911

* = repeat analysis

1 See explanation on pages 9 and 10 under comments.

(Table revised by David Robertson, 8/20/85)

dr/lfssr-2(L).028